

A Path Through the Records – The Ancient Lunar Dome

Part 3 of 5

2026-05-29 Dr. Graeme Innes

The author acknowledges the inspiration of The Other Side of Midnight podcasts with Richard C. Hoagland and the website <https://www.enterprisemission.org>.

In Part 2 of this article, ways were presented for ordinary citizen-scientists to see for themselves the ancient lunar dome fragments from Earth. In Part 3, the dome is viewed outside of the visible spectrum and from other viewpoints in space, revealing the extent of the ruins.

Electromagnetic (EM) frequencies below those of visible light include infrared and radar regions of the EM spectrum. Frequencies above those of visible light include the ultraviolet spectrum.

Infrared Data

During a lunar flyby on 23 June 2009, the LCROSS mission photographed the half-lit lunar disc in the thermal (mid-infrared) spectrum. Fig. 1 is the first infrared image ever taken of the far side of the Moon. The rainbow shading indicates a range of surface temperatures between about -150 and +150 degrees Celsius. The notable red and yellow elliptical area to the left of the frame is a feature called the Moscow Sea.

At the lunar rim, sandwiched between the hot lunar surface (red) and the cold background of space (blue), is a thin yellow region, Fig. 2. This indicates a temperature mid-way between the two extremes, which is only possible for a material with different thermal characteristics than either the lunar soil or the vacuum of space.

The thin yellow arc is roughly 20 to 25 miles (30 to 40 km) high, which is consistent with the height of the dome ruins seen in the visible spectrum (Part 2 of this article series). Since the vantage point was from the lunar far side, it also suggests that the dome ruins completely surround the Moon.

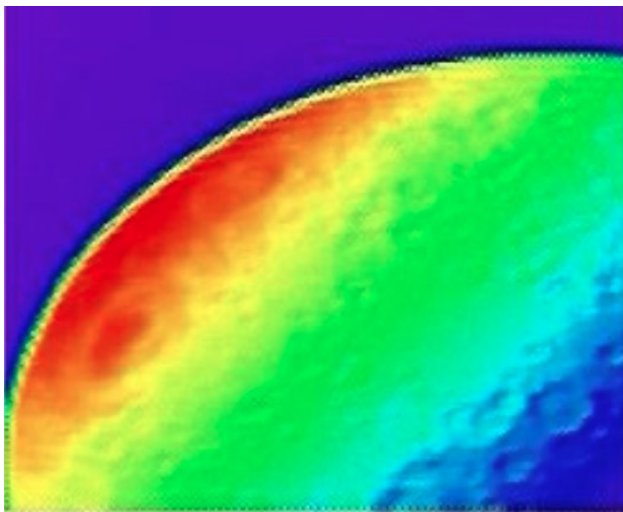


Fig. 1 Heat signature of the lunar disc, LCROSS thermal IR image, 2009.

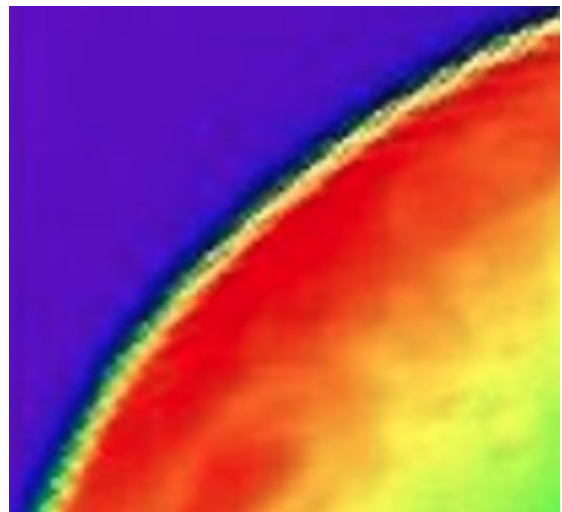


Fig. 2 Closeup of the lunar rim showing a yellow arc between the red and blue areas.

Radar Data and the Dome Architecture

As early as 1946, radar echoes have been received from radio frequencies bounced off the moon, Fig. 3. Given the 240,000 mile (400,000 km) cislunar distance, the strong return of relatively low-powered signals means something on the Moon is strongly reflective in that portion of the EM spectrum, Fig. 4.



Fig. 3 Project Diana radar technology, 1946.

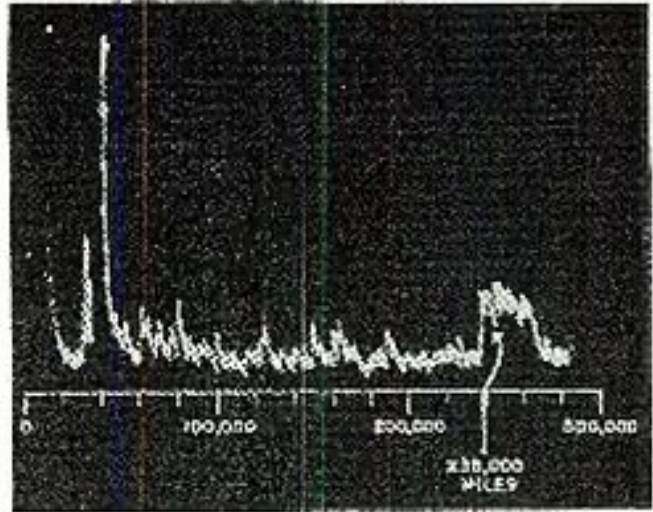


Fig. 4 Timing trace of lunar radar reflections.

It is helpful to know how the radar works. A short pulse of electromagnetic (EM) energy is beamed towards the moon, Fig. 5. The early radar antennas had a beam width comparable to the 0.5 degree apparent size of the moon as seen from earth, so the entire lunar surface would be illuminated sequentially as the pulse passed over the lunar sphere. The shorter the pulse, the narrower is the ring where the pulse wave reflects from the spherical body at any given moment in time.

The radio energy travels at the speed of light – 300,000 km per second. The lunar sphere is 3475 km across, so the echo is delayed by up to 11.6 milliseconds, comparing first and last EM contact with the moon. This effect is referred to as “radar depth”, which enables surface roughness features to be distinguished by their distance (echo delay) from the radio receiver.

The interesting thing is, the echo actually received (Fig. 4) indicated the radar depth of the lunar surface is about 50,000 km (30,000 miles). What was creating the extra pathway that the echo was following?

We know that the most efficient reflection of radar occurs with metallic surfaces, while rock or other non-metallic materials return much weaker signals. Some materials such as ice or glass can be highly radar transparent, with virtually zero reflection. The extension of the lunar echo by up to 14 times strongly indicates the presence of metallic materials – not in mineral form but as actual metal.

Lunar soil samples from the Apollo missions contained roughly 50 percent glass-like material, plus the significant presence of titanium compounds. When modelling or reverse-engineering the architecture of the ancient lunar dome, we consider data from an enhanced Apollo 14 photograph taken from the lunar surface, Fig. 6. There appear to be a number of structural layers, each several kilometers high, shielding the ground level environment under the dome. Metal-laced glass layers would act as waveguides,

causing radar signals trapped between them to travel around the moon perhaps 2 or 3 times before dissipating.

From these considerations, the basic dome design seems to be at least 4 or 5 well-separated layers of glass panels and latticework, held in place with titanium cables or rebar, suspended from regularly spaced glass pillars that are up to 30 km (20 miles) tall. While there has been serious erosion of the structure by meteoric bombardment over millions of years, apparently enough suspended metal elements remain to cause the extended radar echo effect.

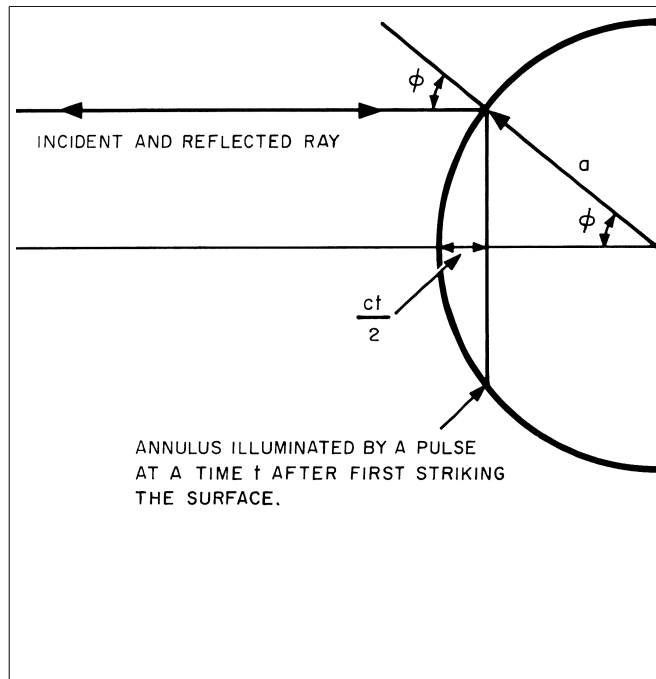


Fig. 5 A short radar pulse illuminates a moving ring or annulus on a sphere. (credit: J.V. Evans)

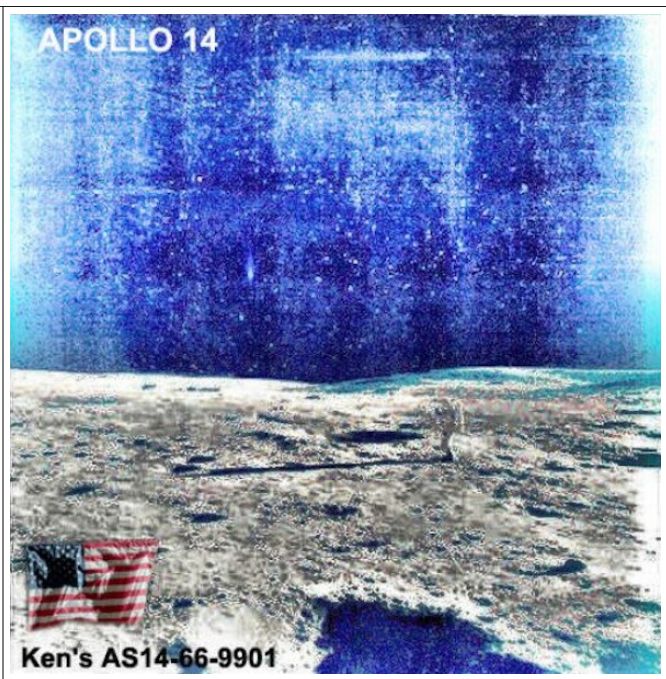


Fig. 6 Apollo 14 frame AS14-66-9901 showing a vertical cross-section of the lunar glass dome.

Ultraviolet Data

At the other end of the visible light spectrum, space-based platforms such as the Danuri mission from South Korea have imaged the moon at ultraviolet (UV) wavelengths. The glass is readily seen in such images, Fig. 7, rising at least 20 miles above the lunar surface. Since earth's atmosphere absorbs most ultraviolet radiation, such photographs could only be obtained after the advent of the space age, enabling the camera to fly above the filtering gas layer.

It should be noted that the Danuri image includes part of the back side of the moon not visible from earth. The unbroken ring of brightly shining glass indicates the ruins generally cover the entire lunar sphere.

The first known UV lunar images were secretly photographed in the 1960s by Project Corona, which was an early satellite technology supposedly used by the United States Central Intelligence Agency (CIA) for spying on Soviet military assets. Research by Richard C. Hoagland later discovered that every frame of the high resolution black and white spy film returned to earth (Fig. 8) – was of the moon! Clearly, the CIA did not EVER expect the rest of us to see them. Intel leaks do happen.

The secrecy of the CIA imaging is consistent with later efforts by NASA to hide the existence of the lunar dome ruins, as mentioned in Part 1 with relation to the Brookings Institute report of 1961.



Fig. 6 Bright lunar rim, 2022 Danuri (S. Korea).

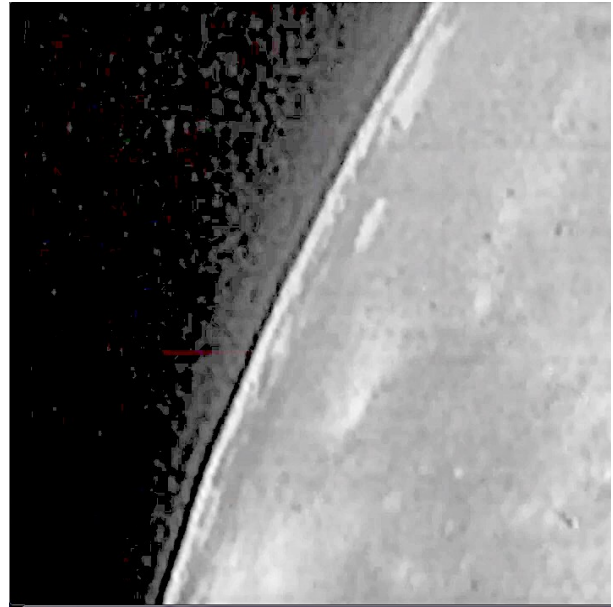


Fig. 7 Project Corona bright lunar rim, 1960s.

In Part 4, the dome ruins have more remarkable properties when seen in extreme-ultraviolet (EUV) and x-ray photographs.

Homework Assignment

Experiment #3:

- Read a paper on the early lunar radar echo experiments, *Radar Studies of the Moon*, J.V. Evans (https://nvlpubs.nist.gov/nistpubs/jres/69D/jresv69Dn12p1637_A1b.pdf).
- How could one research team receive a radar echo from the moon using a very low power 12 watt transmitter (comparable to a car headlamp)?
- Try shining a high-powered spotlight at yourself in a mirror some long distance away. Is there a detectable reflection?
- Try shining the same spotlight at the moon when it is not “full”. Is there any detectable reflection (delayed by about 2.6 seconds due to the speed of light)?
- What would make the moon so incredibly reflective to radar?